

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
16 September 2004 (16.09.2004)

PCT

(10) International Publication Number  
WO 2004/079399 A3

(11) International Patent Classification: H01S 5/068

(74) Agent: HAINES, Miles, John; D. Young & Co., 120 Holborn, London EC1N 2DY (GB).

(21) International Application Number:  
PCT/IB2004/000960

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(32) International Filing Date: 4 March 2004 (04.03.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
03 02829 7 March 2003 (07.03.2003) FR

(71) Applicant (for all designated States except US): AVANEX CORPORATION [US/US]; 40919 Encyclopedia Circle, Fremont, CA 94538 (US).

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(72) Inventor: and

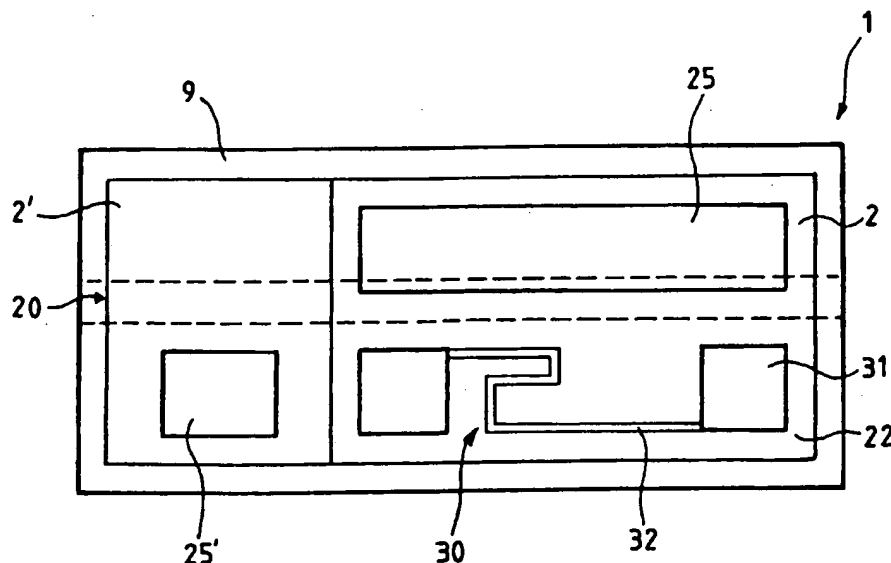
(75) Inventor/Applicants (for US only): DE LA GRANDIERE, Damien [FR/FR]; c/o Alcatel CIT, Route de Nozay, F-91460 Marcoussis (FR). BURIE, Jean-Rene [FR/FR]; 16, rue du Pre D'Army, F-91680 Bruyeres Le Chatel (FR).

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

[Continued on next page]

(54) Title: INTEGRATED THERMAL SENSOR FOR OPTOELECTRONIC MODULES



(57) Abstract: An optoelectronic module comprising at least one optical component placed on a support, said component comprising an active optical layer and at least one confinement layer which carries at least one electrical contact, wherein said module further comprises a thermal sensor comprising a temperature-dependent resistive material which extends over the confinement layer of the optical component, at the side of the electrical contact of said component.

WO 2004/079399 A3

BEST AVAILABLE COPY



**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**(88) Date of publication of the international search report:**

4 November 2004

# INTERNATIONAL SEARCH REPORT

International Application No.

/IB2004/000960

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 H01S5/068

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 H01S 601K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	PATENT ABSTRACTS OF JAPAN vol. 013, no. 581 (E-865), 21 December 1989 (1989-12-21) & JP 01 245585 A (NEC CORP), 29 September 1989 (1989-09-29) abstract	1
A	EP 0 578 883 A (XEROX CORP) 19 January 1994 (1994-01-19) the whole document	1,2
A	EP 1 229 315 A (FUJITSU QUANTUM DEVICES LTD) 7 August 2002 (2002-08-07) the whole document	1,2,4,8
	-/--	



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

### \* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*G\* document member of the same patent family

Date of the actual completion of the international search

23 August 2004

Date of mailing of the international search report

01/09/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

de Bakker, M

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB2004/000960

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>EP 1 233 488 A (AGILENT TECHNOLOGIES INC)  21 August 2002 (2002-08-21)  cited in the application  column 1, line 3 - line 5  column 3, line 45 - line 53  column 4, line 26 - line 44  column 5, line 23 - line 27</p>	1-9
A	<p>MAGISTRALI F ET AL: "ESD-related latent failures of InGaAsP/InP laser diodes for telecommunication equipments"  PROCEEDINGS OF THE ANNUAL RELIABILITY PHYSICS SYMPOSIUM. LAS VEGAS, APR. 9 - 11, 1991, NEW YORK, IEEE, US, vol. SYMP. 29, 9 April 1991 (1991-04-09), pages 224-233, XP010041339  ISBN: 0-87942-680-2  paragraph '05.2!</p>	1
A	<p>WALLON J ET AL: "Sensitivity to electrostatic discharges of low-cost 1.3 mum laser diodes: A comparative study"  MATERIALS SCIENCE AND ENGINEERING B, ELSEVIER SEQUOIA, LAUSANNE, CH, vol. 28, no. 1/3, 1 December 1994 (1994-12-01), pages 314-318, XP004012686  ISSN: 0921-5107  paragraph '0003! - paragraph '0004!</p>	1

# INTERNATIONAL SEARCH REPORT

International Application No  
IB2004/000960

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
JP 01245585	A	29-09-1989	NONE	
EP 0578883	A	19-01-1994	US 5140605 A	18-08-1992
			EP 0578883 A1	19-01-1994
			DE 69217360 D1	20-03-1997
			DE 69217360 T2	17-07-1997
			JP 3266207 B2	18-03-2002
			JP 5190981 A	30-07-1993
EP 1229315	A	07-08-2002	JP 2002231862 A	16-08-2002
			EP 1229315 A1	07-08-2002
			US 2002105045 A1	08-08-2002
EP 1233488	A	21-08-2002	EP 1233488 A1	21-08-2002
			US 2002114363 A1	22-08-2002

**This Page Blank (uspto)**